

Applicant(s) : Sandrine Chanut et al.

Attorney Docket No.: 35207-002US1

Serial No. : 10/589,138

Client Ref. No.: CT/MJS - US 10/589 138

Filed : August 11, 2006

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AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of claims:

1-2. (Cancelled)

3. (Allowed) A self-compacting concrete comprising:

- a cement;
- a mixture of calcined bauxite sands of various particle sizes, the finest sand having a mean particle size of less than 1 mm and the coarsest sand having a mean particle size of less than 10 mm;
- ultrafine calcium carbonate particles having a specific surface area of 10 m²/g or more, and a form factor FF of 0.3 or more;
- a defoamer;
- a water-reducing super plasticizer;
- optionally, fibers; and
- water,

the cements, sands and ultrafine calcium carbonate particles having a particle size distribution such that there are at least three and at most five different particle size classes, the ratio of the mean diameter of one particle size class to that of the class immediately above being about 10.

4-8. (Cancelled)

9. (Currently amended) The concrete according to claim 3, wherein said concrete comprises, in parts by weight:

- 100 of cement;
- 50 to 200 of mixtures of calcined bauxite sands, of various particle sizes,

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the finest sand having a mean particle size of less than 1 mm and the coarsest sand having a mean particle size of less than 10 mm;

- 5 to 25 of ultrafine calcium carbonate and silica fume particles, the silica fume representing at most 15 parts by weight;
- 0.1 to 10 of defoamer;
- 0.1 to 10 of water-reducing super plasticizer;
- 15 to 24 of fibers; and
- 10 to 30 of water.

10. (Allowed) The concrete according to claim 9, wherein said concrete comprises, in parts by weight:

- 100 of cement;
- 80 to 150 of mixtures of calcined bauxite sands, of various particle sizes, the finest sand having a mean particle size of less than 1 mm and the coarsest sand having a mean particle size of less than 10 mm;
- 10 to 20 of ultrafine calcium carbonate particles;
- 0.2 to 5 of defoamer;
- 5 to 7 of water-reducing super plasticizer;
- 17 to 20 of fibers; and
- 10 to 20 of water.

11-14. (Cancelled)

15. (Allowed) The concrete according to claim 3, wherein the ultrafine calcium carbonate particles are ultrafine additions of calcium carbonate crystallized in the form of cubes.

16. (Allowed) The concrete according to claim 3, wherein the cement is a cement of essentially white color.

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17. (Currently amended) The concrete according to claim 3, wherein the mixture of calcined bauxite sands is formed by:

- a sand of mean particle size less than 1 mm, which includes 20% of fines smaller in size than 80 microns;
- a sand of particle size between 3 and 7 mm; and
- optionally, a sand of particle size between 1 and 3 mm,

the sand of smaller particle size being optionally completely or partly replaced with: cement, mineral additions including ground slag, fly ash or calcined bauxite filler, the mean diameter of which is less than 80 μm , in respect of the 20% fraction of fines smaller in size than 80 μm ; and sand of particle size greater than 1 mm, in respect of the other fraction.

18. (Allowed) The concrete according to claim 3, wherein the fibers are selected from the group consisting of metal, synthetic, organic and mineral fibers and mixtures thereof.

19. (Allowed) A method of preparing the fiber concrete as claimed in claim 3, wherein all the constituents of the concrete are mixed together until a concrete of an effective fluidity is obtained or in that the dry granular constituents, including the cement, the sands, the ultrafine calcium carbonate particles, the silica fume and optionally the super plasticizer and the defoamer, are first blended together, then in that the water and optionally the super plasticizer and the defoamer, if these are in liquid form, and optionally the fibers are added to this blend and in that these are all mixed until a concrete having an effective fluidity is obtained.

20. (Allowed) A concrete dry ready-mix, wherein, after the addition of water, optionally fibers, and water-reducing superplasticizer and defoamer, if these are in liquid

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form, said concrete dry-ready mix is capable of resulting in a concrete as claimed in claim 3.

21. (Allowed) The concrete according to claim 3, wherein said ultrafine calcium carbonate particles have a specific surface area of $15 \text{ m}^2/\text{g}$ or more.

22. (Allowed) The concrete according to claim 3, wherein said ultrafine calcium carbonate particles have a specific surface area of $20 \text{ m}^2/\text{g}$ or more.

23. (Allowed) The concrete according to claim 3, wherein said ultrafine calcium carbonate particles have a form factor FF of 0.4.

24. (Allowed) The concrete according to claim 10, wherein said concrete comprises, in parts by weight, 100 to 125 of mixtures of calcined bauxite sands, of various particle sizes, the finest sand having a mean particle size of less than 1 mm and the coarsest sand having a mean particle size of less than 10 mm.

25. (Allowed) The concrete according to claim 10, wherein said concrete comprises, in parts by weight, 13 to 17 of ultrafine calcium carbonate particles.

26. (Allowed) The concrete according to claim 10, wherein said concrete comprises, in parts by weight, 0.5 to 0.7 of defoamer.

27. (Allowed) The concrete according to claim 10, wherein said concrete comprises, in parts by weight, 16 to 20 of water.

28. (Allowed) The concrete according to claim 18, wherein the fibers are selected from the group consisting of polyethylene, polypropylene, polyamide and polyvinyl

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alcohol homopolymer or copolymer fibers, carbon fibers, PPTA (poly-paraphenylene terephthalamide) fibers and steel fibers.